

KIDNER BRIDGE

(Grant County Bridge 160)

Spanning the Mississinewa River on County Road 700 South
Upland Vicinity

Grant County

Indiana

HAER No. IN-78

HAER
IND
27-UPLA.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service

Northeast Region

U.S. Custom House

200 Chestnut Street

Philadelphia, PA 19106

HISTORIC AMERICAN ENGINEERING RECORD

KIDNER BRIDGE (GRANT COUNTY BRIDGE 160) HAER NO. IN-78

HAER
IND
27-UPLA.V,
1-

Location: Spanning the Mississinewa River on County Road
700 South, 10 miles southeast of Marion, Indiana
and 1.14 miles east of I-69.
Upland vicinity
Grant County
Indiana.

UTM: 16.624950.4478750
Quad: Gas City, Indiana

Construction
Company: Indiana Bridge Company of Muncie

Date of
Construction: 1899

Present Owner: Grant County
Grant County Commissioners
401 S. Adams Street
Marion, Indiana 46953

Present Use: Vehicular and pedestrian bridge

Significance: Kidner Bridge is the oldest of the two pinned
polygonal Warren through trusses in Indiana. It
was built by the Indiana Bridge Company of
Muncie, Indiana, a prolific Indiana firm of that
time.

Project
Information: This documentation was undertaken in December,
1992, in accordance with the Memorandum of
Agreement by the Grant County Board of
Commissioners, the Indiana Department of
Transportation, the Federal Highway Administration
and the Advisory Council on Historic Preservation
as a mitigative measure prior to the demolition
and replacement of the bridge.

Aaron Davenport
BUTLER, FAIRMAN and SEUFERT, INC.
9405 Delegates Row
Indianapolis, IN 46240

Kidner Bridge (Grant County Bridge 160) spans the Mississinewa River which flows through Grant County in a southeast to northwest direction. Riparian woods line the river throughout most of its length with agricultural, pasture, wooded and commercial land uses adjacent to the river. The southwest quadrant of Kidner Bridge has previously been mined for gravel, but has been reclaimed and now exhibits mature-immature trees and understory vegetation. The southeast quadrant is currently being mined for gravel. The northwest quadrant is currently agricultural row crops. The northeast quadrant is wooded.

Kidner Bridge is a single span, "triangular" or Warren through truss. The structure was built by the Indiana Bridge company of Muncie, Indiana in 1899. Kidner Bridge is the oldest of two pinned polygonal Warren through trusses in Indiana. This 184 foot long structure features concrete reinforced abutments and cut stone wingwalls. Verticals, originally of die forged eyebars, divides the truss into twelve panels. Double angles welded to stay plates have since replaced the eyebars at the 4th, 6th and 8th panel points. The top chord for the two most central panels is parallel to the lower chord; the angle varies for each adjacent pair of panels. The diagonals stretching in and out from the 5th and 7th top panel points (the ends of the parallel section of the top chord) are made of two pairs of angles laced into channels and then together; laced channels stretch from the top 3rd and 9th to the lower 2nd and 10th panel points, respectively. Pairs of die forged eyebars complete the pattern of diagonals, although those in the 2nd and 11th panels are supplemented by cylindrical eyebars with turnbuckles. Riveted to pin plates, I floor beams carry the asphalt deck with its 16 foot deck width and 16 foot vertical clearance. The lower lateral bracing angles through the center of every other floor beam.

The unusual nature of the truss led Ohio experts to identify it as a Pegram. Unlike the Pegrams, however, these structures do not have compression-bearing posts. The diagonals bear both compression and tension; the verticals are in tension and, also unlike the Pegram, are all perpendicular to the lower chord.

This bridge is the oldest of two pinned polygonal Warren through trusses in Indiana. Along with the single "triangular" in Ohio, all three are products of a prolific Indiana builder which, until recently, retained the original plans for these bridges. The Indiana Bridge Company of Muncie was contacted to obtain a set of plans for Kidner Bridge. All information concerning the bridge was donated to Ball State University, Muncie, Indiana. Ball State University retains the only plan sheet on the Kidner Bridge which illustrates the structural steel details.

It is apparent from the plan sheet and comments noted in the contract index that the plan sheet for Kidner Bridge (Contract

#3113) was used for the construction of at least one other bridge in Grant County (Contract #4234-bridge number and location unknown). The reference card at Ball State University indicated that the erectors raised objections to unspecified parts of the design of the structure. No further information concerning these objections were available. Commissioners records, however, indicate that the abutments for a group of bridges were constructed by a separate contractor. The construction of the bridges followed and were erected to fit the previously constructed abutments.

No historic photographs of the bridge were found.

The existing bridge plaques (one on each end of the bridge) identifies the following County officials and their respective titles in 1899:

Frank W. Chase	Commissioner
Joseph Lugar	Commissioner
Isaac W. Carter	Commissioner
John Wilson	Auditor

Kidner Bridge was repaired in 1953 with additional vertical steel members added. The remaining steel was cleaned or replaced, if needed. The stone masonry abutments were externally reinforced with concrete. The original die forged eyebars in the 4th, 6th and 8th panel points were replaced with double angles welded to stay plates. These repairs did not alter the intended use of the bridge.

The Kidner bridge was named after R. Kidner, a landowner residing in the southwest quadrant of the bridge. R. Kidner owned 102 acres of land on the west bank of the river, south of the road, according to the County Historian. No other special or unusual situations, or personal figures existed that caused the bridge to be built at this location.

The Indiana Bridge Company (builders of the Kidner Bridge) was organized on May 15, 1886 by a group of individuals that had no bridge building experience but were strong in promoting the financial and industrial development of central Indiana. The Indiana Bridge Company was, in fact, started by purchasing the plant and assets of the failed Indianapolis Bridge Company (failed in 1885). The plant was moved to Muncie, Indiana, in November, 1886. This company built bridges in many midwestern states in addition to states such as Texas, Iowa, Louisiana and Mississippi. The company also provided structural and architectural work for the construction of buildings. In fact, by 1900, the Indiana Bridge Company had moved beyond bridge building and applied great effort in obtaining contracts for building construction.

No records were found which described any special conditions or technology in the construction of Bridge 160. Machinery and tools were probably similar to those used by other bridge manufacturers of that time.

Available activities at this historic property include sightseeing, fishing, and possibly swimming. Only sightseeing is related to the historic nature of the bridge (by individuals stopping to view the bridge in its setting).

In the late 19th century - early 20th century, Grant County developed a grid system for the transportation network. For almost every mile north-south and east-west throughout the county, a road was constructed. When a road encountered a waterway, a bridge was constructed, thus, improving access for the motoring public. Such was the case for the Kidner Bridge.

Local and regional economic and social conditions were not significantly affected by the construction of any one bridge in this part of the county. However, collectively, the Mississinewa River bridges provided shorter travel distances, thus decreasing trip time and costs for travellers, farmers and later, motorists, in the eastern portion of Grant County and surrounding counties.

BIBLIOGRAPHY

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Drawings and Documents Archive
College of Architecture and Planning
Ball State University
Muncie, IN 47306

Grant County Commission Records
Grant County Commissioners
401 S. Adams Street
Marion, Indiana 46953

HABS/HAER Inventory Card; National Park Service, James L. Cooper

Indiana Bridge Company,
1810 S. Macedonia
Muncie, IN 47306

Iron Monuments to Distant Posterity, Indiana's Metal Bridges, 1870-1930, James L. Cooper

Mr. Ray Lockwood
Grant County Historical Society
2075 East Bocock Road
Marion, IN 46952

Marion Public Library
600 South Washington Street
Marion, IN 46953

M.W., Inc., Bridge Reinspection Report: Grant County
(Indianapolis, 1978)

Mr. Leslie Neher
Grant County Historian
113 East "A" Street
Gas City, IN 46933

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